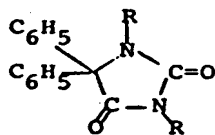








WHAT WE CLAIM IS:





1. A compound having the formula:



wherein R represents H or a member selected from the group consisting of $-\text{CH}-\text{R}_1$; wherein R_1 represents a member selected from the group consisting of H, C_1-C_7 straight or branched alkyl, CCl_3 , CBr_3 , Cl_3 , , $(\text{CH}_3)_2\text{NCH}_2-$, $-\text{CHO}$, - CH_2- ,

- $\text{CH}=\text{CH}-$, , , or  $^{\text{R}_3}$; wherein R_3 represents

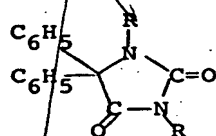
a member selected from the group consisting of $-\text{OH}$, halogen, $-\text{OCH}_3$, $-\text{COOCH}_3$, $-\text{NO}_2$ or $-\text{OCOCH}_3$; wherein X is $-\text{O}-$, $-\text{S}-$,



or $-\text{N}-$; and wherein R_2 represents a member selected from the group consisting of $-\text{P}(\text{OH})(\text{R}_1)-\text{OH}$ or $-\text{C}(\text{R}_1)(\text{R}_2)-\text{R}_4$, wherein R_4 is a member selected from the group consisting of  $^{\text{R}_3}$ wherein R_3 is defined as above, , ,  $\rightarrow \text{O}$



the residue of any naturally occurring protein amino acid, the residue of any N-substituted amino acid, wherein said substituent is any amino acid protective group cleavable via hydrogenolysis or hydrolysis or the residue of an N,N- C_1-C_5 -dialkyl or C_4-C_7 cycloalkylamino acid, or wherein R_4 is a member selected from the group consisting of $-(\text{CH}_2)_n\text{COOH}$, $-\text{CH}_2\text{OCH}_2\text{COOH}$, $-(\text{CH}_2)_n\text{COCH}_3$, $-(\text{CH}_2)_n\text{C}(\text{O})\text{OC}_2\text{H}_5$, or $-(\text{CH}_2)_n\text{C}(\text{O})\text{N}(\text{R}_5)(\text{R}_6)$, wherein n represents an integer of from 1-5 and R_5 and R_6 which may be the same or different represent C_1-C_5 alkyl or together form a heterocyclic ring with the N atom to which they are attached, or wherein R_4 is a member selected from the group consisting of imidazolyl, $-\text{O}-\text{C}_1-\text{C}_8$ alkyl, $-\text{O}-\text{benzyl}$, $-\text{O}-\text{phenyl}$, and $-\text{O}-(\text{CH}_2)_n\text{N}(\text{R}_5)(\text{R}_6)$, wherein n , R_5 and R_6 are defined





as above; with the proviso that R in both occurrences cannot represent H simultaneously; or the pharmaceutically acceptable acid addition or basic salts, C₁-C₄ alkylhalide quaternary salts or N-oxide thereof;

- 5 2. The compound of claim 1:
3-Hydroxymethyldiphenylhydantoin.
3. The compound of claim 1:
3-N,N-Dimethylglycyloxymethyldiphenylhydantoin.
4. The compound of claim 1:
10 3-N,N-Dimethylglycyloxymethyldiphenylhydantoin
methanesulfonate.
5. The compound of claim 1:
3-N,N-Dimethylglycyloxymethyldiphenylhydantoin
salicylate.
- 15 6. The compound of claim 1:
3-Glutaryloxymethyldiphenylhydantoin.
7. The compound of claim 1:
3-Succinyloxymethyldiphenylhydantoin.
8. A pharmaceutical composition comprising an effective
20 anticonvulsant antiepileptic or antiarrhythmic amount of a
compound having the formula:




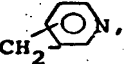
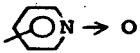
wherein R represents H or a member selected from the group consisting of -CH-R₁; wherein R₁ represents a member selected from the group consisting of H, C₁-C₇ straight or branched alkyl, CCl₃, CBr₃, CI₃, , (CH₃)₂NCH₂-, -CHO, -O-CH₂-,

- 25 from the group consisting of H, C₁-C₇ straight or branched alkyl, CCl₃, CBr₃, CI₃, , (CH₃)₂NCH₂-, -CHO, -O-CH₂-,

-CH=CH-, , , or ; wherein R₃ represents

a member selected from the group consisting of -OH, halogen, -OCH₃, -COOCH₃, -NO₂ or -OCOCH₃; wherein X is -O-, -S-,

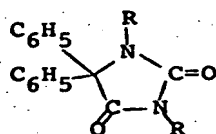
- 30 or -N-^{R₁}; and wherein R₂ represents a member selected

from the group consisting of $\text{-}\overset{\text{O}}{\underset{\text{OH}}{\text{P}}}\text{-OH}$ or $\text{-}\overset{\text{O}}{\text{C}}\text{-R}_4$, wherein R_4 is a member selected from the group consisting of $\text{-}\overset{\text{O}}{\text{C}}\text{-R}_3$ wherein R_3 is defined as above, , , 

the residue of any naturally occurring protein amino acid, the residue of any N-substituted amino acid, wherein said substituent is any amino acid protective group cleavable via hydrogenolysis or hydrolysis or the residue of an N,N-C₁-C₅-dialkyl or C₄-C₇ cycloalkylamino acid, or wherein R_4 is a member selected from the group consisting of $\text{-(CH}_2\text{)}_n\overset{\text{O}}{\text{C}}\text{OH}$, $\text{-CH}_2\text{OCH}_2\overset{\text{O}}{\text{C}}\text{OH}$, $\text{-(CH}_2\text{)}_n\overset{\text{O}}{\text{C}}\text{OCH}_3$, $\text{-(CH}_2\text{)}_n\overset{\text{O}}{\text{C}}\text{-OC}_2\text{H}_5$, or $\text{-(CH}_2\text{)}_n\overset{\text{O}}{\text{C}}\text{-N}\overset{\text{R}_5}{\underset{\text{R}_6}{\text{R}}}$, wherein n represents an integer of from 1-5 and R_5 and R_6 which may be the same or different represent C₁-C₅ alkyl or together form a heterocyclic ring with the N atom to which they are attached, or wherein R_4 is a member selected from the group consisting of imidazolyl, $\text{-O-C}_1\text{-C}_8$ alkyl, -O-benzyl , -O-phenyl , and $\text{-O-(CH}_2\text{)}_n\text{N}\overset{\text{R}_5}{\underset{\text{R}_6}{\text{R}}}$, wherein n , R_5 and R_6 are defined as above; with the proviso that R in both occurrences cannot represent H simultaneously; or the pharmaceutically acceptable acid addition or basic salts, C₁-C₄ alkylhalide quaternary salts or N-oxide thereof in combination with a pharmaceutically acceptable inert carrier.

9. The composition of claim 8, wherein said compound is: 3-Hydroxymethyldiphenylhydantoin.
10. The composition of claim 8, wherein said compound is: 3-N,N-Dimethylglycyloxymethyldiphenylhydantoin.
11. The composition of claim 8, wherein said compound is: 3-N,N-Dimethylglycyloxymethyldiphenylhydantoin methanesulfonate.
12. The composition of claim 8, wherein said compound is: 3-N,N-Dimethylglycyloxymethyldiphenylhydantoin salicylate.
13. The composition of claim 8, wherein said compound: 3-Glutaryloxymethyldiphenylhydantoin.
14. The composition of claim 8, wherein said compound: 3-Succinyloxymethyldiphenylhydantoin.

15. A method for alleviating cardiac arrhythmias or convulsions in a warm-blooded animal which comprises administering thereto, an effective antiarrhythmic or anticonvulsant amount of a compound having the formula:



wherein R represents H or a member selected from the group consisting of $-\text{CH}-\text{R}_1$; wherein R_1 represents a member selected from the group consisting of H, C_1-C_7 straight or branched alkyl, CCl_3 , CBr_3 , Cl_3 , C_6H_5 , $(\text{CH}_3)_2\text{NCH}_2-$, $-\text{CHO}$, $\text{C}_6\text{H}_5\text{O}-\text{CH}_2-$,

$\text{C}_6\text{H}_5\text{CH}=\text{CH}-$, C_6H_5 , $\text{C}_6\text{H}_4\text{N}$, or $\text{C}_6\text{H}_4\text{R}_3$; wherein R_3 represents

a member selected from the group consisting of $-\text{OH}$, halogen, $-\text{OCH}_3$, $-\text{COOCH}_3$, $-\text{NO}_2$ or $-\text{OCOCH}_3$; wherein X is $-\text{O}-$, $-\text{S}-$,

or $-\text{N}-$; and wherein R_2 represents a member selected from the group consisting of $-\text{P}(\text{OH})_2$ or $-\text{C}(\text{R}_4)-$, wherein R_4 is a member selected from the group consisting of C_6H_5 , $\text{C}_6\text{H}_4\text{N}$, $\text{CH}_2-\text{C}_6\text{H}_4\text{N}$, $\text{C}_6\text{H}_4\text{N} \rightarrow \text{O}$

the residue of any naturally occurring protein amino acid, the residue of any N-substituted amino acid, wherein said substituent is any amino acid protective group cleavable via hydrogenolysis or hydrolysis or the residue of an N,N- C_1-C_5 -dialkyl or C_4-C_7 cycloalkylamino acid, or wherein R_4 is a

member selected from the group consisting of $-(\text{CH}_2)_n\text{COOH}$, $-\text{CH}_2\text{OCH}_2\text{COOH}$, $-(\text{CH}_2)_n\text{COCH}_3$, $-(\text{CH}_2)_n\text{C}(\text{O})\text{OC}_2\text{H}_5$, or $-(\text{CH}_2)_n\text{C}(\text{O})\text{N}(\text{R}_5)(\text{R}_6)$, wherein n represents an integer of from 1-5 and R_5 and R_6

which may be the same or different represent C_1-C_5 alkyl or together form a heterocyclic ring with the N atom to which they are attached, or wherein R_4 is a member selected from the group consisting of imidazolyl, $-\text{O}-\text{C}_1-\text{C}_8$ alkyl, $-\text{O}-\text{benzyl}$,

-O-phenyl, and $-(CH_2)_n N \begin{matrix} R_5 \\ R_6 \end{matrix}$, wherein n , R_5 and R_6 are defined

as above; with the proviso that R in both occurrences cannot represent H simultaneously; or the pharmaceutically acceptable acid addition or basic salts, C_1-C_4 alkylhalide quaternary salts or N-oxide thereof.

16. The method of claim 15, wherein said compound is:

3-Hydroxymethyldiphenylhydantoin.

17. The method of claim 15, wherein said compound is:

3-(N,N-Dimethylglycyloxymethyldiphenylhydantoin.

18. The method of claim 15, wherein said compound is:

3-(N,N-Dimethylglycyloxymethyldiphenylhydantoin methanesulfonate.

19. The method of claim 15, wherein said compound is:

3-(N,N-Dimethylglycyloxymethyldiphenylhydantoin salicylate.

20. The method of claim 15, wherein said compound:

3-Glutaryloxymethyldiphenylhydantoin.

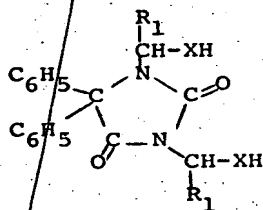
21. The method of claim 15, wherein said compound:







3-Succinyloxymethyldiphenylhydantoin.

22. The method of claim 15, wherein said compound is

administered in combination with a pharmaceutically acceptable inert carrier.

23. The intermediate compound:

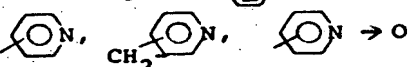


25 wherein R_1 represents a member selected from the group consisting of H, C_1-C_7 straight or branched alkyl, CCl_3 , CBr_3 , CI_3 , , $(CH_3)_2NCH_2-$, $-CHO$, - $O-CH_2-$, - $CH=CH-$, , , or - R_3 ; wherein R_3 represents a member selected from the group consisting of $-OH$, halogen,

-OCH₃, -COOCH₃, -NO₂ or -OCOCH₃; wherein X is -O-, -S-,

or -N-^{R₁}; and wherein R₂ represents a member selected from the group consisting of -P(=O)(OH)- or -C(=O)-R₄, wherein R₄ is a member selected from the group consisting of

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wherein R₃ is defined as above,  → O

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the residue of any naturally occurring protein amino acid, the residue of any N- substituted amino acid, wherein said substituent is any amino acid protective group cleavable via hydrogenolysis or hydrolysis or the residue of an N,N-C₁-C₅-dialkyl or C₄-C₇ cycloalkylamino acid, or wherein R₄ is a member selected from the group consisting of -(CH₂)_n-C(=O)OH, -CH₂OCH₂-C(=O)OH, -(CH₂)_n-C(=O)OCH₃, -(CH₂)_n-C(=O)OC₂H₅, or -(CH₂)_n-C(=O)-N(R₅)(R₆), wherein n represents an integer of from 1-5 and R₅ and R₆

15

which may be the same or different represent C₁-C₅ alkyl or together form a heterocyclic ring with the N atom to which they are attached, or wherein R₄ is a member selected from the group consisting of imidazolyl, -O-C₁-C₈ alkyl, -O-benzyl, -O-phenyl, and -O-(CH₂)_n-N(R₅)(R₆), wherein n, R₅ and R₆ are

defined as above.